

17.0 Slick Rock, Colorado, Disposal Site

17.1 Compliance Summary

The Slick Rock, Colorado, Disposal Site was inspected on May 9, 2007, and was in excellent condition. Minor erosion continues on site; does not threaten disposal cell or site features, repair planned in 2008. DOE dismantled the stock fence around the reclaimed spoils pile. Noxious weeds were sprayed with herbicide; the continued weed control efforts have significantly reduced infestations on the site. The U.S. Energy Corporation uranium exploration drill hole discovered in 2006 just outside of the site boundary was reclaimed; no new activity was observed. No cause for a follow-up or contingency inspection was identified.

17.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Slick Rock, Colorado, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site are specified in the *Long-Term Surveillance Plan [LTSP] for the Burro Canyon Disposal Cell, Slick Rock, Colorado* (DOE/AL/62350–236, Rev. 0, U.S. Department of Energy [DOE], Albuquerque Operations Office, May 1998) and in procedures established by DOE to comply with requirements of Title 10 *Code of Federal Regulations* Part 40.27 (10 CFR 40.27). These requirements are listed in Table 17–1.

Table 17–1. License Requirements for the Slick Rock, Colorado, Disposal Site

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Sections 3.0 and 6.2	Section 17.3.1
Follow-up or Contingency Inspections	Section 3.4	Section 17.3.2
Routine Maintenance and Repairs	Section 4.0	Section 17.3.3
Ground Water Monitoring	Sections 2.5 and 2.6	Section 17.3.4
Corrective Action	Section 5.0	Section 17.3.5

Institutional Controls—Institutional controls at the disposal site, as defined by DOE Policy 454.1, consist of federal ownership of the property, a site perimeter fence, warning/no trespassing signs placed along the property boundary, and a locked gate at the entrance to the site. Verification of these institutional controls is part of the annual inspection.

The 62-acre disposal site is owned by the United States of America and was accepted under the U.S. Nuclear Regulatory Commission general license (10 CFR 40.27) in 1998. DOE is the licensee and, in accordance with the requirements for UMTRCA Title I sites, is responsible for the custody and long-term care of the site.

Inspectors found no evidence that these institutional controls were ineffective or violated.

17.3 Compliance Review

17.3.1 Annual Inspection and Report

The site, northeast of Slick Rock, Colorado, was inspected on May 9, 2007. Results of the inspection are described below. Features and photograph locations (PLs) mentioned in this report are shown on Figure 17–1. Numbers in the left margin of this report refer to items summarized in the Executive Summary table.

17.3.1.1 Specific Site Surveillance Features

Access Road, Gate, Fence, and Signs—Access to the site is off County Road T11; an improved gravel and dirt road maintained by San Miguel County. The road was in good condition at the time of the inspection. The culvert, installed beneath the access road in 2004 to allow runoff to flow along the borrow ditch, continues to be eroded by stormwater runoff (PL–1). Although it remains functional, repairs will be made in 2008.

17A The wire entrance gate is secured with a DOE lock. A wire stock fence surrounds the site; it does not follow the DOE property boundary. The top and bottom strands are smooth wire to allow wildlife to pass over and under, and the middle two strands are barbed wire. In 2007, DOE dismantled the stock fence around the reclaimed spoils pile and added additional fencing to connect the opening that resulted, enclosing the disposal cell. Two new 4-foot pedestrian gates were also installed; one gate located at the northern end of the new fence, and the other located near perimeter sign P17. Both the entrance and pedestrian gates and the stock fence were in excellent condition.

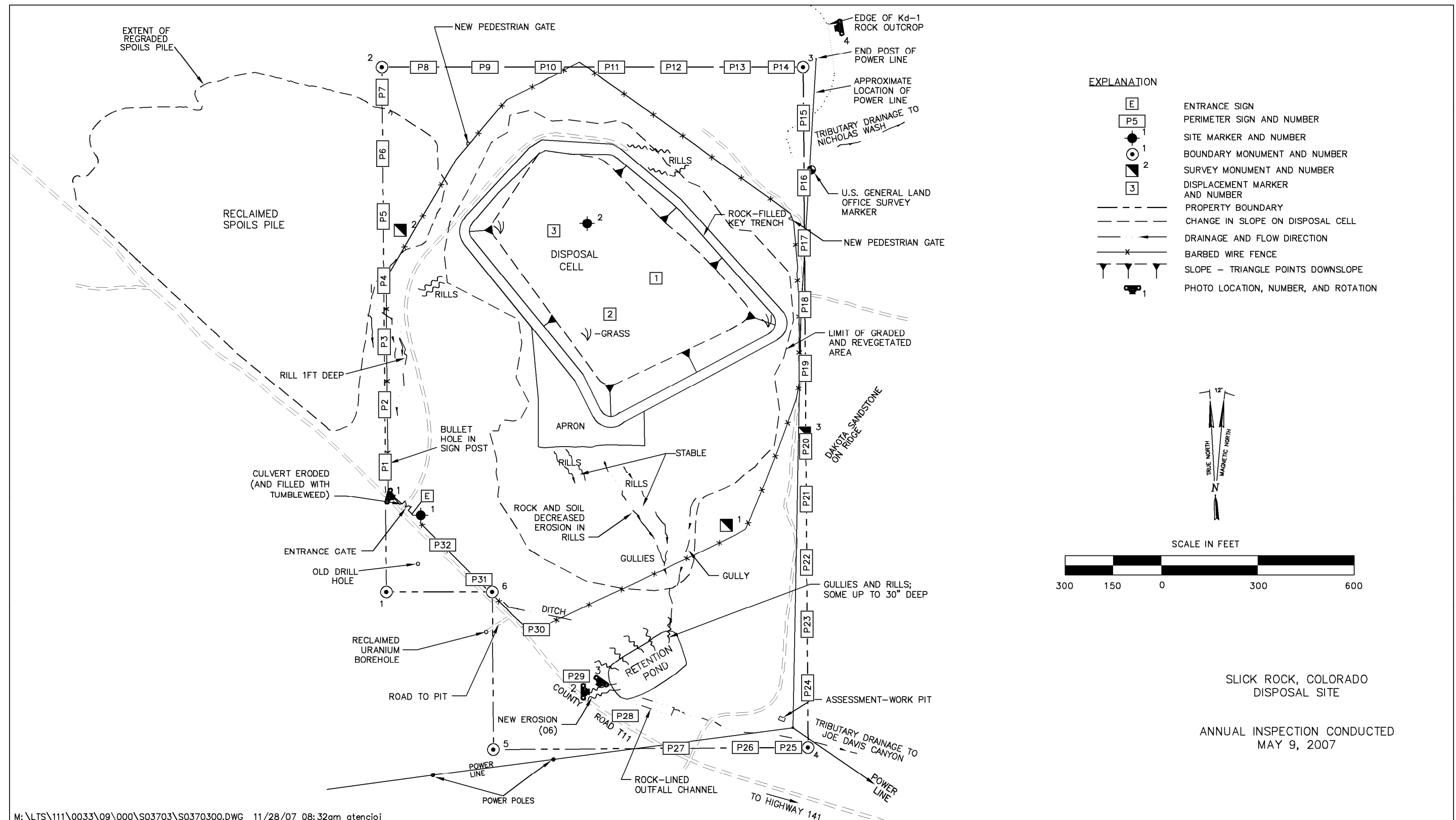
The entrance sign is located inside the stock fence just east of the entrance gate and was in excellent condition. Thirty-two perimeter signs, designated P1 through P32, are spaced at approximately 200-foot intervals around the site. The signs, attached to steel posts set in concrete, are 5 feet inside the site boundary. The signpost at perimeter sign P1 has a bullet hole; however, it remains sturdy. All other perimeter signs were in excellent condition.

Site Markers and Monuments—The two granite site markers, SMK–1 near the entrance gate and SMK–2 on the north-central part of the disposal cell, were in excellent condition.

Six boundary monuments define the corners of the site boundary, and three survey monuments are located along the fence line. All the monuments were located and were in excellent condition.

17.3.1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into three areas referred to as transects: (1) the rock-covered top of the disposal cell including side slopes, key trench, and apron; (2) the area between the disposal cell and the site boundary including the stock pond, re-contoured and reseeded areas, and the stock fence; and (3) the outlying area including the spoils pile.



Within each transect, inspectors examined specific site surveillance features, such as survey and boundary monuments, signs, and site markers. Inspectors examined each transect for evidence of erosion, settling, slumping, or other disturbance that might affect site integrity or the long-term performance of the site.

Disposal Cell, Side Slopes, Key Trench, and Apron—The disposal cell was completed in 1996. The top of the disposal cell is roughly pentagonal. Five side slopes descend from the top of the disposal cell at a maximum grade of 25 percent. The cell top and side slopes are covered with riprap. At the base of the side slopes is a key trench that encircles the disposal cell. The key trench is as much as 5 feet deep and 20 feet wide and filled with riprap. South and downslope from the disposal cell, an apron of riprap extends for 50 to 200 feet beyond the key trench. All side slopes, the key trench, and the apron are in excellent condition. Rock covering the disposal cell, key trench, and apron is rounded cobble- and pebble-sized material. No evidence of settling, slumping, or erosion was seen on any of the rock-covered surfaces of the disposal cell. All rock and rock-covered features were in excellent condition.

Area Between the Disposal Cell and the Site Boundary—The area around the disposal cell includes the retention pond and the graded and reseeded areas. Surface drainage from the disposal cell flows south into the retention pond, which is constructed in a channel tributary to Joe Davis Canyon. An outflow channel below the pond is lined with rounded cobblestones for a short distance. The pond, which contained water at the time of the inspection (PL-2), and outflow channel were in good condition.

Areas of erosion between the apron and the retention pond were repaired in 2004. The area downslope of the apron is stabilizing, but some erosion is still occurring. Recent storm runoff has increased the size of gullies southwest and northwest of the retention pond. One of the gullies southwest of the retention pond is located approximately 25 feet below the culvert outlet on the county-maintained access road; it is 8 to 10 feet wide and contains a 6-foot-deep, vertical headcut (PL-3). A short distance to the southeast is a second gully containing a headcut that is approximately 3 feet deep. Both of these headcuts will require repair in 2008. Some of the gullies on the northwest side of the retention pond are as deep as 30 inches, but they do not present a hazard to the disposal cell or to a site feature, so action is not warranted at this time. All the erosion areas will continue to be monitored.

Rills down slope from the disposal cell apron between the apron and retention pond showed evidence of erosion from recent stormwater runoff events, such as sedimentation and soil loss, but they do not present a hazard to the disposal cell. Rills were also noted east of perimeter signs P2 and P3. The larger rills measured 2 feet wide by 1 foot deep, approximately the same as previous years. Some erosion is also occurring inside the west property boundary but currently is not impacting any site features. This erosion will also continue to be monitored.

Vegetation around disturbed areas adjacent to the disposal cell is well established with desirable species and with Russian thistle and cheatgrass.

Noxious weeds have been identified at the disposal site during previous site inspections. During the 2007 inspection, re-growth of Russian knapweed was discovered in an area immediately southeast of the disposal cell and in several areas northwest of the retention pond; all areas were marked. These noxious weeds were treated with herbicide by a licensed applicator during the summer of 2007.

17B

Outlying Area—During construction of the disposal cell, material excavated from the site was placed in a 60-foot-high spoils pile on the west side of the site. A right-of-way permit (COC-57851) was granted to DOE by the U.S. Bureau of Land Management (BLM) that encompassed the spoils pile and the former staging area adjacent to the site entrance. In October 2006, BLM agreed that the permit area had been successfully reclaimed and terminated DOE's permit (effective October 18, 2006). As a result, in August 2007, DOE removed the stock fence surrounding the spoils pile and will no longer include the spoils pile in its annual inspection.

The Kd-1 sandstone unit (Dakota sandstone), which crops out near the northeast corner of the property, was identified in the LTSP as a potential pathway of lateral migration of transient drainage from the disposal cell. Minor erosion of the surface had taken place along the outcrop, where fresh chunks of rock were observed to have broken off (PL-4). However, there was no evidence of moist soil, mineralization, or phreatophyte vegetation that would indicate that transient drainage is occurring along this interface.

The natural, undisturbed areas outside the disposal site support grass and scattered piñon and juniper trees. The primary land use is grazing. Steep hillsides north and northeast of the site slope eastward into Nicholas Wash. Areas north and northeast of the site are routinely used for recreational purposes (e.g., hunting, four-wheeling, firewood cutting, etc.). No new disturbances in the outlying areas were noted at the time of the inspection.

The U.S. Energy Corporation uranium exploration drill hole discovered in 2006 just outside of the site boundary between boundary monuments BM-5 and BM-6 along the southwest side of the site was reclaimed and no new activity was observed. The surrounding area contains reserves of uranium and vanadium; therefore, additional new mining activity may occur in the future.

17.3.2 Follow-Up or Contingency Inspections

DOE will conduct follow-up inspections if (1) a condition is identified during the annual inspection or other site visit that requires a return to the site to evaluate the condition, or (2) DOE is notified by a citizen or outside agency that conditions at the site are substantially changed.

No follow-up or contingency inspections were required in 2007.

17.3.3 Routine Maintenance and Repairs

In 2007, DOE dismantled the fence surrounding the reclaimed spoils pile, added additional fencing to enclose the disposal cell, installed two new 4-foot pedestrian gates, and sprayed noxious weeds with herbicide.

17.3.4 Ground Water Monitoring

DOE does not monitor ground water at this site because there is no pre-existing contaminant plume at the disposal site and the uppermost aquifer is not a current or potential source of drinking water due to low yield.

17.3.5 Corrective Action

Corrective action is taken to correct out-of-compliance or hazardous conditions that create a potential health and safety problem or that may affect the integrity of the disposal cell or compliance with 40 CFR 192.

No corrective action was required in 2007.

17.3.6 Photographs

Table 17-2. Photographs Taken at the Slick Rock, Colorado, Disposal Site

Photograph Location Number	Azimuth	Description
PL-1	105	Eroded culvert filled with tumbleweeds; view of outlet.
PL-2	90	Retention pond, filled with water, and outflow channel.
PL-3	215	Gully southwest of retention pond with 6-foot vertical headcut, filled with tumbleweeds.
PL-4	260	Dakota sandstone outcrop (Kd-1 sandstone unit).



SRK 5/2007. PL-1. Eroded culvert filled with tumbleweeds; view of outlet.



SRK 5/2007. PL-2. Retention pond, filled with water, and outflow channel.



SRK 5/2007. PL-3. Gully southwest of retention pond with 6-foot vertical headcut, filled with tumbleweeds.



SRK 5/2007. PL-4. Dakota sandstone outcrop (Kd-1 sandstone unit).

End of current section.